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EXAMINER

WANG, JIN CHENG

ART UNIT PAPER NUMBER

2672

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/072,043	Applicant(s) PRIEM, CURTIS R.	
	Examiner Jin-Cheng Wang	Art Unit 2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16-20, 24-36, 39, 41-43 and 46-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-20, 24-36, 39, 41-43, and 46-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/23/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/11/2005 has been entered. Claims 1, 16-20, 24-26, 39, 41-43 and 46-48 have been amended. Claims 14-15, 21-23, 37-38, 40 and 44-45 have been canceled. Claims 1-13, 16-20, 24-36, 39, 41-43, and 46-54 are pending in the application.

Response to Arguments

Applicant's arguments filed July 11, 2005 have been fully considered but are not found persuasive in view of the ground(s) of rejection set forth below.

As address below, the amended Claim 1 is unpatentable over Lobodzinski U.S. Patent No. 5,734,873 (hereinafter Lobodzinski) in view of U.S. Patent No. 5,999,199 (hereinafter Larson).

For example, Lobodzinski lacks an explicit disclosure of the register file 46 and the graphics engine 48 being integrated in a single chip and therefore is silent to the claim limitation of "the graphics controller comprising a second memory dedicated to holding information read from the font array."

However, Larson teaches a graphics controller (e.g., the graphics processor 100 of Larson Figs. 4-5) including a graphics engine (3D engine 150 of Larson Fig. 5) and Register File 135 and therefore the register file and the graphics engine has been integrated in a single chip.

It would have been obvious to have incorporated the Larson's teaching of a single chip design of the graphics controller including the register file and the graphics engine. Lobodzinski teaches both a register file 46 and a graphics engine 48 within the display controller 30 (See Lobodzinski Fig. 2) wherein the register file can be integrated into the graphics engine in a single chip design according to Larson (See Larson Fig. 4-5). Thus, The combination of Larson with Lobodzinski teaches the claim limitation of the graphics controller (formed by the graphics engine 48 and the register file 46 in a single chip design) comprising a second memory (Text engine registers) dedicated to holding information (character font information and character string information including the font address array; see Lobodzinski column 3-5 and Table I) read from the font array (the font array stored with the frame buffer; see Lobodzinski Figs. 3A and 4A).

One of the ordinary skill in the art would be motivated to do this because register file and the graphics engine can be integrated into the graphics controller in a single chip design (Larson Figs. 4-5).

Lobodzinski further discloses the text engine reads through the string of character indexes (see column 3, lines 30-33 and Fig. 5) and width vectors, **calculates the address of the character**, updates the X-coordinate in the viewport 58 and instructs the BLT engine 50 to perform a screen-to-screen color expanded BLT of the monochrome image. The address registers listed in Table 1 include a TXE Font Address register, the TXE String address register, TXE

Art Unit: 2672

height register and TXE character count register. Lobodzinski discloses the text engine calculates the address information for these registers. Therefore, Lobodzinski discloses a first register for holding glyph information for a character in the font including one of the TXE address registers for holding glyph information for a character in the font. Lobodzinski discloses a TXE Font address register that specifies an address for the font array for the font. Lobodzinski further discloses a third register that contains an index to the character in the font array (TXE String address register contains linear dword address of character indexes and width vector for string to be drawn; see Table 1 and Fig. 5).

In Fig. 5, the character width and height information is specified using the font address and the character indexes wherein the character indexes point to the locations of the image lines for the character to be drawn and thus specifies the character height information and the character width information is specified in the address FA. Therefore, Lobodzinski discloses width and height information for the character is located in the font array using the address and the index.

Moreover, Lobodzinski discloses the text engine reads through the string of character indexes and width vectors and calculates the address of the character and therefore Lobodzinski discloses loading/reading from the first memory into the first register because character glyph information are located in any of the text engine registers listed in Table 1. Moreover, Lobodzinski discloses a bounding box having the background color is defined in the register file 46 (column 8, lines 55-57) which is part of a graphics controller in accordance with the argument set forth in the above. Therefore, Lobodzinski discloses the added claim limitations set forth in the claim 1.

Remarks: The first memory as claimed may also be a separate memory such as the memory 24 of Fig. 1 or a system memory in the processor (see column 3, lines 2-5) and the display driver executed by the processor 22 **sends image data defining one or more fonts to the display controller 30** to be stored in the frame buffer. Therefore, the display controller 30 also meets the claim limitation of “a graphics controller”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13, 16-20, 24-36, 39, 41-43, and 46-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobodzinski U.S. Patent No. 5,734,873 (hereinafter Lobodzinski) in view of U.S. Patent No. 5,999,199 (hereinafter Larson).

1. Claim 1:

Lobodzinski teaches a system for rendering fonts (see figure 1 of the reference, column 1, lines 53-67, column 2, lines 1-6, column 2, lines 40-57) the system comprising:

A first memory (e.g., frame buffer 56 of figure 2; column 2, lines 58-67; column 3, lines 1-10) having stored therein a data structure (e.g., figures 3-7, column 3, lines 11-33; column 4, lines 1-4), the data structure including at least one font array (e.g., font 1 of reference sign 62a and font 2 of reference sign 62b of figure 3 in the reference); and

A graphics controller (e.g. the graphics controller 30 of figure 2) coupled to the first memory (e.g., the frame buffer memory 56; see column 3, lines 4-5), the graphics controller accessing a font array of the data structure (e.g., figure 2, 3A and 4A).

Lobodzinski lacks an explicit disclosure of the register file 46 and the graphics engine 48 being integrated in a single chip and therefore is silent to the claim limitation of “the graphics controller comprising a second memory dedicated to holding information read from the font array.”

However, Larson teaches a graphics controller (e.g., the graphics processor 100 of Larson Figs. 4-5) including a graphics engine (3D engine 150 of Larson Fig. 5) and Register File 135 and therefore the register file and the graphics engine has been integrated in a single chip.

It would have been obvious to have incorporated the Larson’s teaching of a single chip design of the graphics controller including the register file and the graphics engine. Lobodzinski teaches both a register file 46 and a graphics engine 48 within the display controller 30 (See Lobodzinski Fig. 2) wherein the register file can be integrated into the graphics engine in a single chip design according to Larson (See Larson Fig. 4-5). Thus, The combination of Larson with Lobodzinski teaches the claim limitation of the graphics controller (formed by the graphics engine 48 and the register file 46 in a single chip design) comprising a second memory (Text engine registers) dedicated to holding information (character font information and character string information including the font address array; see Lobodzinski column 3-5 and Table I) read from the font array (the font array stored with the frame buffer; see Lobodzinski Figs. 3A and 4A).

One of the ordinary skill in the art would be motivated to do this because register file and the graphics engine can be integrated into the graphics controller in a single chip design (Larson Figs. 4-5).

Lobodzinski further discloses the text engine reads through the string of character indexes (see column 3, lines 30-33 and Fig. 5) and width vectors, **calculates the address of the character**, updates the X-coordinate in the viewport 58 and instructs the BLT engine 50 to perform a screen-to-screen color expanded BLT of the monochrome image. The address registers listed in Table 1 include a TXE Font Address register, the TXE String address register, TXE height register and TXE character count register. Lobodzinski discloses the text engine calculates the address information for these registers. Therefore, Lobodzinski discloses a first register for holding glyph information for a character in the font including one of the TXE address registers for holding glyph information for a character in the font. Lobodzinski discloses a TXE Font address register that specifies an address for the font array for the font. Lobodzinski further discloses a third register that contains an index to the character in the font array (TXE String address register contains linear dword address of character indexes and width vector for string to be drawn; see Table 1 and Fig. 5).

In Fig. 5, the character width and height information is specified using the font address and the character indexes wherein the character indexes point to the locations of the image lines for the character to be drawn and thus specifies the character height information and the character width information is specified in the address FA. Therefore, Lobodzinski discloses width and height information for the character is located in the font array using the address and the index.

Moreover, Lobodzinski discloses the text engine reads through the string of character indexes and width vectors and calculates the address of the character and therefore Lobodzinski discloses loading/reading from the first memory into the first register because character glyph information are located in any of the text engine registers listed in Table 1. Moreover, Lobodzinski discloses a bounding box having the background color is defined in the register file 46 (column 8, lines 55-57) which is part of a graphics controller in accordance with the argument set forth in the above. Therefore, Lobodzinski discloses the added claim limitations set forth in the claim 1.

Remarks: The first memory as claimed may also be a separate memory such as the memory 24 of Fig. 1 (see column 3, lines 2-5) and the display driver executed by the processor 22 sends image data defining one or more fonts to the display controller 30 to be stored in the frame buffer. Therefore, the display controller 30 also meets the claim limitation of “a graphics controller”.

Claim 2:

The claim 2 encompasses the same scope of the invention as that of claim 1 except additional claimed limitation of “a frame buffer.” However, Lobodzinski further discloses claimed invention of a frame buffer (e.g., reference numeral 56 of figure 2).

Claim 3:

The claim 2 encompasses the same scope of the invention as that of claim 1 except additional claimed limitation of “a system memory.” However, Lobodzinski further discloses

Art Unit: 2672

claimed invention of a system memory (e.g., reference numeral 24 of figure 1 or reference numeral 56 of figure 2).

Claim 4:

The claim 4 encompasses the same scope of the invention as that of claim 1 except additional claimed limitation of “a plurality of characters.” However, Lobodzinski further discloses claimed invention that font 1 comprises a plurality of characters C0-C256 and font 2 comprises a plurality of characters C0-C96 (e.g., figure 3A). Therefore, the claim 4 is rejected for the reason as set forth above.

Claim 5:

The claim 5 encompasses the same scope of the invention as that of claim 4 except additional claimed limitation of “each of the characters comprises one bit per pixel.” However, Lobodzinski further discloses claimed invention that each of the characters C0-C256 comprises one bit per pixel (e.g., figure 3A). Therefore, the claim 5 is rejected for the reason as set forth above.

Claim 6:

The claim 6 encompasses the same scope of the invention as that of claim 4 except additional claimed limitation of “each of the characters comprises a plurality of bits per pixels.” However, Lobodzinski further discloses claimed invention that each of the characters C0-C256

comprises a plurality of bits per pixel (e.g., figure 3B). Therefore, the claim 6 is rejected for the reason as set forth above.

Claim 7:

The claim 7 encompasses the same scope of the invention as that of claim 1 except additional claimed limitation of “at least one font array comprises a plurality of font arrays.” However, Lobodzinski further discloses claimed invention that at least one font array comprises a plurality of font arrays (e.g., figure 4A). Therefore, the claim 7 is rejected for the reason as set forth above.

Claim 8:

The claim 8 encompasses the same scope of the invention as that of claim 7 except additional claimed limitation of “each of the plurality of font arrays includes a plurality of characters.” However, Lobodzinski further discloses claimed invention that each of the plurality of font arrays includes a plurality of characters (e.g., figures 3B and 4B). Therefore, the claim 8 is rejected for the reason as set forth above.

Claim 9:

The claim 9 encompasses the same scope of the invention as that of claim 8 except additional claimed limitation of “characters within different font arrays can be different sizes.” However, Lobodzinski further discloses claimed invention that characters within different font

Art Unit: 2672

arrays can be different sizes (e.g., figures 4B and 5). Therefore, the claim 9 is rejected for the reason as set forth above.

Claim 10:

The claim 10 encompasses the same scope of the invention as that of claim 9 except additional claimed limitation of “each of the characters comprises a bit per pixel.” However, Lobodzinski further discloses claimed invention that each of the characters comprises a bit per pixel (e.g., figures 4B and column 4, lines 5-21). Therefore, the claim 10 is rejected for the reason as set forth above.

Claim 11:

The claim 11 encompasses the same scope of the invention as that of claim 9 except additional claimed limitation of “each of the characters comprises a plurality of bits per pixel.” However, Lobodzinski further discloses claimed invention that each of the characters comprises a plurality of bits per pixel (e.g., column 5, lines 54-65). Therefore, the claim 11 is rejected for the reason as set forth above.

Claim 12:

The claim 12 encompasses the same scope of the invention as that of claim 9 except additional claimed limitation of “each of the characters includes size height information.” However, Lobodzinski further discloses claimed invention that each of the characters includes size height information (e.g., column 6, lines 60-65). Therefore, the claim 13 is rejected for the reason as set forth above.

Claim 13:

Art Unit: 2672

The claim 13 encompasses the same scope of the invention as that of claim 9 except additional claimed limitation of “each of the characters includes size width information.” However, Lobodzinski further discloses claimed invention that each of the characters includes size width information (e.g., column 6, lines 60-65). Therefore, the claim 13 is rejected for the reason as set forth above.

Claim 16:

The claim 16 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “the set of registers includes a font pitch register.” However, Lobodzinski further discloses claimed invention that the set of registers includes a font pitch register (e.g., figure 2, TABELE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets the TXE Command Reg1 register as a font pitch register in the claimed invention because the TXE Command Reg1 register has bits information (5-3) of font pitch. Therefore, the claim 16 is rejected for the reason as set forth above.

Claim 17:

The claim 17 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “the set of registers includes an index register.” However, Lobodzinski further discloses claimed invention that the set of registers includes an index register (see figure 2, TABELE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets the TXE String Address register as an

Art Unit: 2672

index register in the claimed invention that stores address of *character indexes*. Therefore, the claim 17 is rejected for the reason as set forth above.

Claim 18:

The claim 18 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “a horizontal information register.” However, Lobodzinski further discloses claimed invention of a horizontal information register (see figure 2, TABELE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets the TXE Destination X register as a horizontal information register in the claimed invention because the TXE Destination X register stores onscreen X location (horizontal location) for text string to be drawn in accordance with the table 1 of the Lobodzinski reference. Therefore, the claim 18 is rejected for the reason as set forth above.

Claim 19:

The claim 19 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “a vertical information register.” However, Lobodzinski further discloses claimed invention of a vertical information register (see figure 2, TABELE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Office interprets the TXE Destination Y register as a vertical information register in the claimed invention because the TXE Destination Y register stores onscreen Y location (vertical location) for text string to be drawn in accordance with the table 1 of the Lobodzinski reference. Therefore, the claim 18 is rejected for the reason as set forth above.

Claim 20:

The claim 20 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “a linear information register.” However, Lobodzinski further discloses claimed invention of a linear information register (see figure 2, TABELLE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets the TXE String Address register or TXE Font Address register as a linear information register in the claimed invention because any of two registers stores *linear* dword address. Therefore, the claim 20 is rejected for the reason as set forth above.

Claim 24:

The claim 24 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “a size width register.” However, Lobodzinski further discloses claimed invention of a size width register (see figure 2, TABELLE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets the TXE Character Count register as a size width register in the claimed invention because the reference teaches that TXE Character Count register is the same as BLT width register and stores the number of text glyphs to be drawn. Therefore, the claim 20 is rejected for the reason as set forth above.

Claim 25:

The claim 25 encompasses the same scope of the invention as that of claim 14 except additional claimed limitation of “a size height register.” However, Lobodzinski further discloses claimed invention of a size height register (see figure 2, TABELLE I, column 4, lines 30-33, column 5, lines 33-49, column 7, lines 1-59 and column 9, lines 5-25). The Examiner interprets

Art Unit: 2672

the TXE Height register as a size height register in the claimed invention because the reference teaches that TXE Height register is the same as BLT height register and stores the number of scan-lines of text to be drawn. Therefore, the claim 20 is rejected for the reason as set forth above.

2. Claim 26:

The claim 26 is a rephrasing of claim 1 in a method form. The claim 26 is rejected for the same reason as set forth in claim 1.

Claims 27-36:

Claims 27-36 is a rephrasing of claims 2-11 in a method form. The claim is rejected for the same reason as set forth respectively in claims 2-11.

Claims 39 and 41-43:

Claims 39 and 41-43 is a rephrasing of claims 16-20 in a method form. The claim is rejected for the same reason as set forth respectively in claims 16-20.

Claims 46-47:

Claims 46-47 is a rephrasing of claims 24-25 in a method form. The claim is rejected for the same reason as set forth respectively in claims 24-25.

Claims 48-54:

Claims 48-54 encompass the same scope of invention as that of claims 1-13 and 16-19. The claims are rejected for the same reason as set forth in claims 1-13 and 16-19.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is ~~703-872-9306~~ 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw


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PRIMARY EXAMINER